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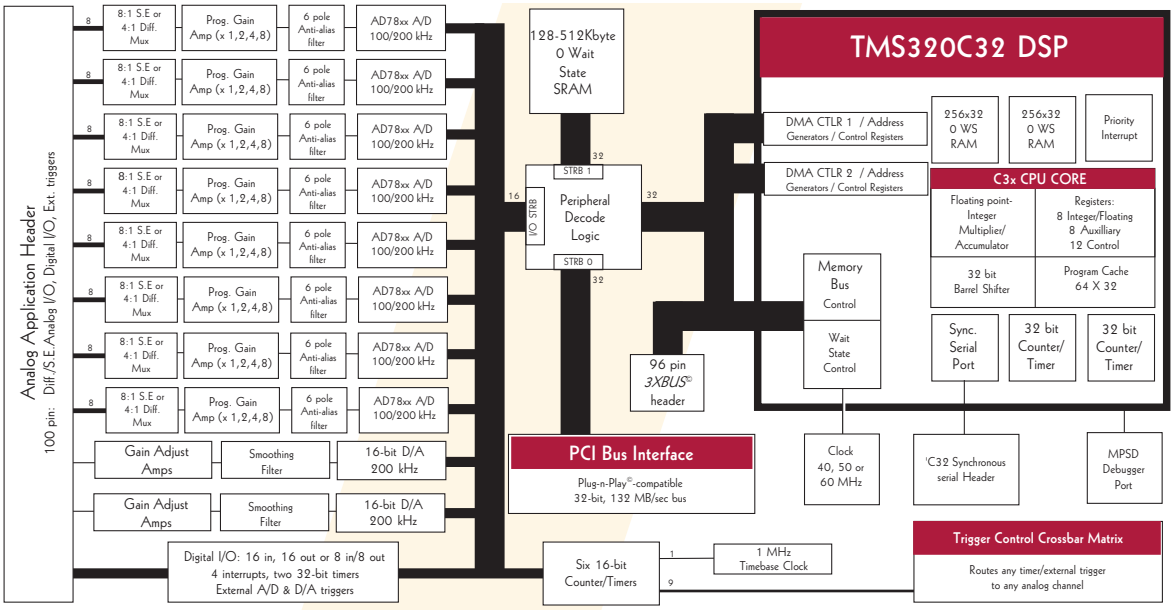
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Find the *Molex / Innovative Integration cADC64* at our website: *Click HERE*

ADC64

Sixty-Four Channel A/D Board with 32-Bit, Floating point DSP and PCI Bus Interface



The ADC64 30MIPS/60MFLOPS coprocessor features an ultra-high-performance PCI-bus interface and the TMS320C32 DSP processor, with up to 512 Kbytes of zero-wait SRAM, FIFO, sixty-four analog inputs, two analog outputs plus 16 bits of digital I/O, one sync serial port, five counter/timers and a choice of software development environments.

Plug-N-Play

The ADC64 heralds a new era in PC-based data acquisition. Bringing together for the first time a low-cost, high-performance DSP core, a dazzling array of analog and digital I/O with screaming fast 132 Mbyte/sec PCI bus performance, the ADC64 is THE value platform for next-generation, intelligent data acquisition system designs.

The ADC64 features an I/O mix perfect for a wide range of applications in data logging, process control and audio processing. Features include eight channels of 16-bit, instrumentation-grade analog input with -120 dB/decade tunable anti-alias filters and programmable gain (x 1,2,4,8) capable of sampling at any rate up to 100K samples/sec (optional 200 kHz A/D's are available). Each A/D channel may optionally be multiplexed either 8:1 (single-ended) or 4:1 (differential) allowing acquisition from up to sixty-four channels using a single card. The board also provides two channels of 16-bit, instrumentation-grade analog output running at up to 200 kHz per channel. Sixteen bits of high-drive digital I/O are also on-card.

The ADC64 is compatible with the full range of 3XBUS expansion cards for I/O expansion. Combining an ADC64 with a SCSI3X daughter card yields a killer data logger capable of streaming sixty-four channels of 12.5 kHz analog data to disk running under Windows using zero Host-PC CPU resources.

The ADC64 features a bus-mastering PCI bus interface which allows the ADC64 to work in full partnership with the host processor for maximum system efficiency. An onboard communications FIFO between the 'C32 and the host achieves burst transfers up to 132 Mbytes/sec, allowing data and tasks to be efficiently handled at the system level. Full Plug-n-Play compatibility is implemented which is consistent with newer operating systems and eliminates the hassle of system hardware configuration.

Features

- 40 or 60 MHz (20 or 30 MIPS) TMS320C32 Floating point processor
- Half-size, IBM PC Plug-in Card (PCI Bus) 132 MB/sec, 32-bit Plug-n-Play interface
- 128K - 512K bytes onboard 0 WS SRAM
- 2 Kb bidirectional FIFO
- MPSD debugger interface
- 15 Mbaud synchronous serial port
- Instrumentation-grade analog I/O:
- Eight 100 or 200 kHz, 16 bit A/D channels:
  - Programmable gain: 1,2,4,8
  - 120 dB/decade anti alias filter
  - 8:1 S.E. muxes - up to 64 analog inputs
  - 4:1 DIFF muxes - up to 32 analog inputs
- Two 200 kHz, 16-bit D/A converters
- Eight independent timebases

Windows Compatible

- Full Windows 95 and NT 4.0 support
- Ring 0 device drivers featuring Plug-n-Play and host interrupt support
- 32-bit DLLs and Visual C examples w/source

Tools
TI C Assembler
JTAG DEBUGGERS: Go DSP, TI
Windows 95 & NT DLLs/Drivers
Matlab/Visual Basic Interface

DSP Libraries
Vectar, Sigtar, Flotar
Peripheral Libraries

3rd Party Software
Hypersignal RIDE

Peripherals
SCSI3X, PROTO3X
FIFO3X, 3XPAK

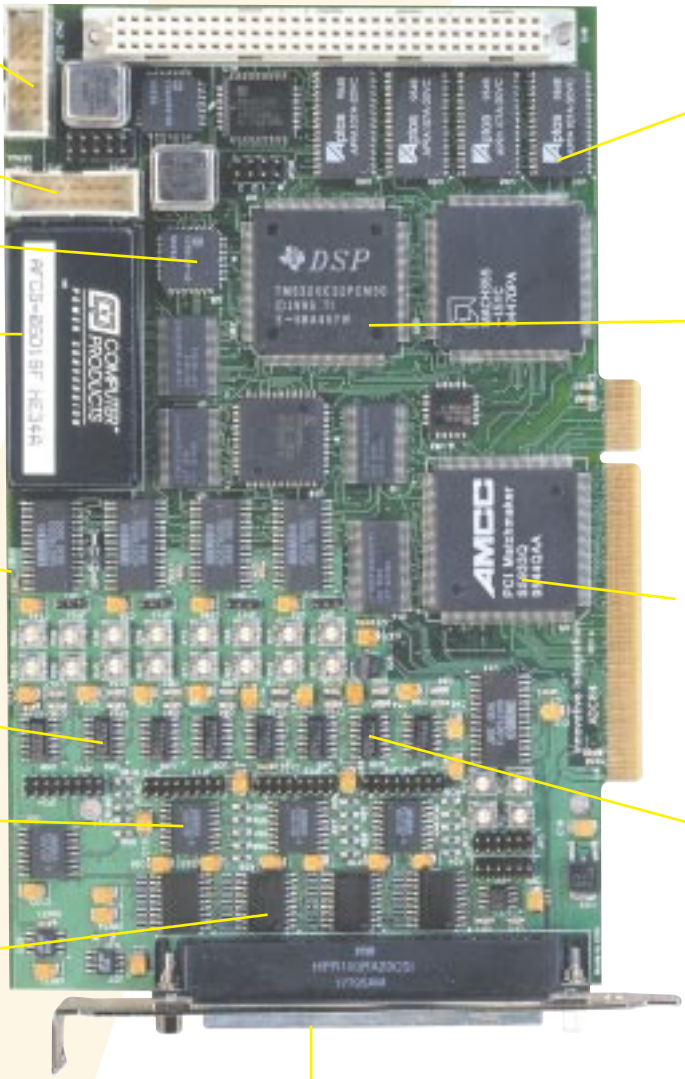
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ADC64

Sixty-Four Channel A/D Board with 32-Bit, Floating point DSP with PCI Bus Interface



The ADC64 30MIPS/60MFLOPS coprocessor features an ultra-high-performance PCI-bus interface and the TMS320C32 DSP processor, with up to 512 Kbytes of zero-wait SRAM, bi-directional FIFOs, instrumentation-grade analog I/O (up to 64 inputs and two outputs) plus 16 bits of digital I/O, one sync serial port, two counter/timers and a choice of software development environments.

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Digital Signal Processor	Texas Instruments TMS320C32 32 bit floating point DSP optimized instruction set for DSP. On-chip resources: 512 x 32 memory; 8 accumulators; hardware multiplier; barrel shifter; two DMA controllers; serial port; 2 32-bit timers; 16 prioritized interrupts; 64 word instruction cache. DSP speed = 40 or 60 MHz.
Memory	Zero waits state; 32K x 32 standard, expandable on-board to 128K x 32
FIFO Memory	I/O mapped on PC and DSP.
Debug Port	XDS-510 compatible MPSD port for emulation and scan path testing; Supports C/Assembly source level debugging with DEBUG3X and Code Composer.
Host PC Interface	PCI 32-bit; consumes 64 I/O locations. FIFO Memory auto-mappable into PC I/O space by PCI BIOS. Supports bidirectional interrupt driven operation - 1 PC interrupt Multiple cards supported.
Digital I/O	16 bits TTL input or output, 64 mA sink/ 32 mA source.
Timers / Counters	(2) 32 bit timers in DSP clocked at DSP speed/4. (6) 16 bit timers using independent 1 MHz timebase.
Serial Ports	One on DSP chip. ONCHIP: up to 15 M baud; 8, 16 or 32 formats; synchronous serial. Interrupt support.
Power Requirements	+5 Vdc, -5Vdc TBD. On-board 5W DC-DC converter with short protection for clean analog power
Connectors	SCSI2 100 pin Female for analog and digital I/O; DIN 96 Female for DSP expansion; IDC14 Male for MPSD debugger port. IDC 14 for serial port.
Physicals	Half Size IBM AT card; 7.6 in long x 4.8 in high; Max component height .75 in. Temp range: 0-70C
Compatible Add-on Cards	PROTO3X prototype card, SCSI3X SCSI-2 interface; FIFO3X parallel/serial; 3XPAK industry pack adapter.

A/D Converter 8 Channels	Burr-Brown ADS 7805 or ADS 7811. Each converter has independent filtering. Interrupt off conversion complete. Each A/D muxed either 4:1 differential or 8:1 single-ended. ADS 7811 specifications in parenthesis.
Resolution	16 bit
Update Rate	100KHz (200 KHz 7811)
Settling Time	10 uS (no filtering) @ 10V step settling to .0008% (2.5 uS 7811)
Analog Input Range	+/-10V, +/-2.5V, 0-10V, 0-5V, +/-5V
S/N Ratio	88dB (84 dB 7811)
THD	-90dB
Dynamic Range	90 dB
Gain Error	+/-5%
Differential Linearity Error	+3/ -2 LSB
Bipolar Zero Error	Trimmable
Aperture Delay	40 nS
Aperture Jitter	Meets AC specs.
Programmable Gain	PGA206: 1,2,4,8 PGA207: 1, 2, 5, 10
Input Impedance	10,000 M ohms || 3 pF
Filter Characteristics	6-pole filter, with user-specifiable vol/off
Conversion timing sources	Software select from one of six 16-bit counter/timer sources or DSP memory mapped access or external TTL source.
Mux Characteristics	DG528 for 8:1 single-ended inputs; DG529 for 4:1 differential inputs Switch time: 300 nS
System Scan Rate	64 Channels: 12.5 KHz; 32 Channels: 25 KHz; 8 Channels: 100 KHz (64 Channels: 25 KHz; 32 Channels: 50 KHz; 8 Channels: 200 KHz)
D/A Converter 2 channels	Two Burr-Brown DAC712. Each D/A channel has independent filtering.
Resolution	16 bits
Output Range	0-5V, +/-5V
Slew Rate	15V/us
Settling Time	13 uS (no filtering) @ 20V step; 2.5 uS for 1LSB step settling to .0008%.
Update Rate	200kHz
S/N Ratio	.0063% max
THD	.009% max
Bipolar Zero Error	trimmable
Bipolar Zero Error Drift	trimmable
Differential Non-Linearity	D/A glitch, impulse 15v/us, +/- LSB max.
Temp Range	0-70 C
Filtering	Output smoothing filter - single pole filter, 200 kHz rolloff (custom with cap/resistor change)
Interface to DSP	Memory mapped
Conversion timing sources	Software select from one of six16-bit counter/timer sources or DSP memory mapped access or external TTL source.

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